CAMEROON GENERAL CERTIFICATE OF EDUCATION BOARD
Technical and Vocational Education Examination

WORKSHOP PROCESSES AND MATERIALS 1
5395

JUNE XXXX **INTERMEDIATE LEVEL**

Sbject Title	**WORKSHOP PROCESSES AND MATERIALS 1**
Subject code No	**5395**
Paper No	**ONE**

Mobile phones are **NOT** allowed in the examination room.

5410 WELDING FABRICATION 1: MULTIPLE CHOICE QUESTION PAPER

1 hour 30 minutes

INSTRUCTIONS TO CANDIDATES

Read the following instructions carefully before you start answering the questions in this paper. Make sure you have a soft HB pencil and an eraser for this examination.

1. USE A SOFT HB PENCIL THROUGHOUT THE EXAMINATION.
2. DO NOT OPEN THIS BOOKLET UNTIL YOU ARE TOLD TO DO SO.

Before the examination begins:

3. Check that this question booklet is headed "**Intermediate Level – 5395 WORKSHOP PROCESSES AND MATERIALS 1**
4. Insert the information required in the spaces above.
5. Insert the information required in the spaces provided on the answer sheet using your HB pencil:

   Candidate Name, Exam Session, Subject Code, Centre Number and Candidate Number.

   Take care that you do not erase or fold the answer sheet or make any marks on it other than those asked for in these instructions.

How to answer the questions in this examination:

6. Answer **ALL** the **50** questions in this Examination. All questions carry equal marks.
7. Each question has FOUR suggested answers: **A, B, C** and **D**. Decide which answer is correct. Find the number of the question on the Answer Sheet and draw a horizontal line across the letter to join the square brackets for the answer you have chosen.

   For example, if **C** is your correct answer, mark **C** as shown below:

   [A] [B] [C] [D]

8. Mark only one answer for each question. If you mark more than one answer, you will score a zero for that question. If you change your mind about an answer, erase the first mark carefully, then mark your new answer.
9. Avoid spending too much time on any one question. If you find a question difficult, move on to the next question. You can come back to this question later.
10. Do all rough work in this booklet, using, where necessary, the blank spaces in the question booklet.
11. **You must not take this booklet and the answer sheet out of the examination room. All question booklets and answer sheets will be collected at the end of the examination.**

1. The two main groups of metallic Smaterial mainly used in engineering are
   A Iron and steel
   B Metallic and Non metallic
   C Natural and synthetic
   D Plastic and ceramic

2. The group of material in which plastic falls is
   A Synthetic
   B Natural
   C Metallic
   D Rubber

3. Iron ores are found in the earth crust in the form of
   A Iron chloride
   B Iron oxide
   C Pig iron
   D stone

4. The charging elements of the blast furnace are
   A Cast iron, Pig iron and scrap
   B Pig iron, slag and coke
   C Pig iron, limestone and coke
   D Magnetite, limestone and coke

5. Bronze is an alloy of
   A Copper and zinc
   B Copper and aluminium
   C Copper and lead
   D Copper and tin

6. The parts 1,2,3 and 4 of the sand cast rip moulding

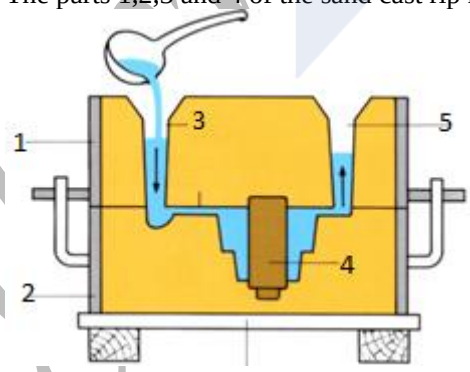


Figure 1

   A Drag, cope, runner and riser
   B Cope, drag , riser and runner
   C Drag, cope, runner and dowel
   D Cope, drag, runner and core

7. The shaping process in figure 2 is known as

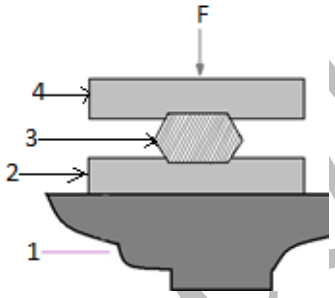


figure 2

A	Flatting
B	Swaging
C	Drawing down
D	Extrusion

8. All of the following are casting defects except
   A Tears and cracks
   B Shrinkage
   C Ingot
   D Rat tail

9. The commercial form of the metallic material in figure 3 is

figure 3

   A I-Beam
   B U-beam
   C C-beam
   D T-beam

10. The standard length of an angle iron is
    A 5.8 meters
    B 6 meters
    C 5 meters
    D 6.8 meters

11. The percentage of Ni in the designation 45 NiCr Ti 16-12 is
    A 4%
    B 1.6%
    C 16%

D 12%

12. In the designation EN A C AlSiCu3, C signify
A Prefix
B Base alloy
C Ingot
D Moulded piece

13. Identify the letter 'C' in the designation GC35F
A Cast steel
B Mechanical construction steel
C Unalloyed steel
D Alloyed steel

14. The ability of a material to be hammered, rolled into shape without fracture is
A Ductility
B Malleability
C Elasticity
D Tenacity

15. The property of a material to resist any deformation is
A Stiffness
B Ductility
C Hardness
D Toughness

16. Identify a non physical property of metal
A Colour
B Alkalinity
C Weight
D Size

17. The percentage of carbon in eutectoid steel is
A 0.3%
B 0.63%
C 0.8%
D 1.7%

18. The meaning of B.C. C in heat treatment is
A Bold centered cubic
B Body centered cubic
C Base centered cubic
D Bottom centered cubic

19. Indicate the type of heat treatment process represented in figure 4

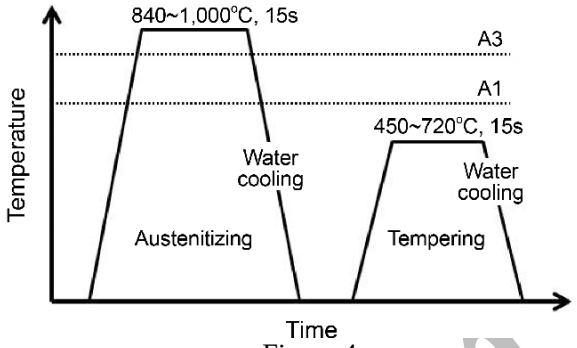


Figure 4

A Hardening
B Tempering
C Annealing
D Normalising

20. Identify the cooling medium used in annealing heat treatment process
A Furnace
B Oil
C Water
D Air

21. The gas used in a nitriding heat treatment process is known as
A Helium
B Carbon dioxide
C Nitrogen
D Argon

22 Name the metallic method of protecting metals against corrosion from the list below
A Inorganic coating
B Conversion coating
C Painting
D Hot dipping

23. Select a method of preparing a surface before coating from the list below
A Rubbing
B Painting
C Washing
D Blast cleaning

24. Identify the most important safety equipment to use during arc welding
A Safety shoes
B Hand gloves
C Welding shield
D overall

25. Select the most likely cause of accident in a work shop from the list below
A Manual handling
B Excessive noise
C Adequate lighting
D Administration

26. One safety practice when using grinding machine
A Use eye guard goggle
B Always tidy the workshop
C Do not eat in the workshop
D Do not play in the workshop

27. Describe how to avoid spinning round when drilling
A Lubricate the work continuously
B Hold the work properly in a vice
C Hold the work firmly
D Use protective guards

28. Identify a non linear measuring instrument
A Height gauge
B Micro metre
C Vernier gauge
D Vernier calliper

29. An inspection tool used in controlling dimension is called
A Steel rule
B Vernier calliper
C Micro meter
D Go and not go gauge

30. Interpret the micro meter reading on figure 5 below

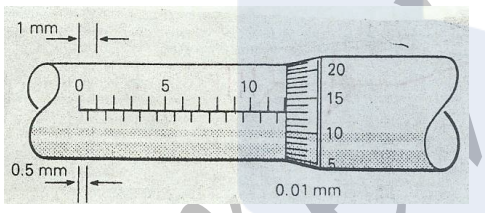


figure 5

A 12.00mm
B 12.5mm
C 12.01mm
D 12.13mm

31. Name the type of filing operation carried out in figure 6

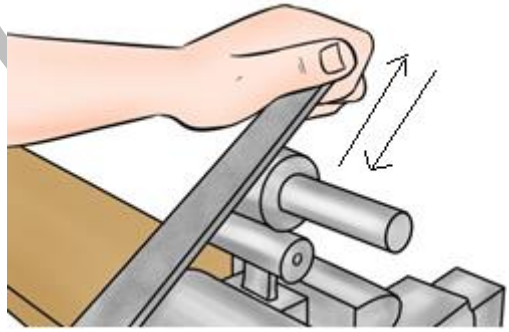


Figure 6

A Cross filing
B Draw filing
C Flat filing
D Radial filing

32. Name the pointing position of the teeth of a hack saw during cutting operation
A to the frame
B towards the handle
C away from the handle
D straight opposite the frame

33. Taps are used to produce
A External thread
B Internal thread
C Internal hole
D External shaft

34. Select one operation of a hammer from the list below
A Making center holes
B Welding
C Chopping out
D finishing

35. A design is tapped to M10×1.5 interpret the meaning of 1.5 is
A Length of tap
B Nominal diameter
C Metric thread
D pitch

36. Give the thickness of a sheet metal that a snips can cut
A 10/10mm
B 40/10mm
C 20/10mm
D 30/10mm

37. Identify the lubricant used to prevent friction when cutting with power hacksaw
A Water
B Soluble oil
C Grease
D Engine oil

38. Interpret the parts 1,2,3 and 4 of the perforating machine in figure 7 below

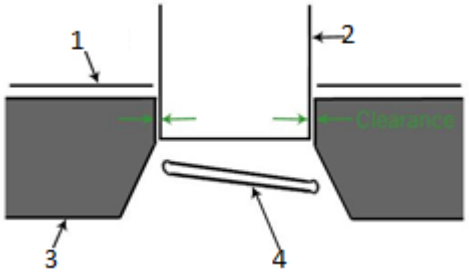


Figure 7

A Work piece, punch, die and part
B Part, work piece, punch and die
C Punch, die, part and work piece
D Work piece, die, punch and part

39. The difference between oxygen/ acetylene welding and cutting below pipes
    A Cutting blow pipe have extra oxygen valve
    B Welding blow pipes are smaller
    C Cutting blow pipe are shorter
    D Cutting and welding blow pipes are the same

40. The process used to increase the cross section of a bar at the expense of its length
    A Twisting
    B Fullering
    C Drawing down
    D Up setting

41. Indicate the standard tool used to twist a square bar
    A Hack saw
    B Snip
    C Prepared wrench
    D hammer

42. Calculate the developed length of the bar in figure 8 with a diameter of 8mm rod and bend radius 10 mm.

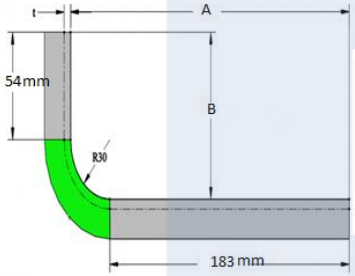


figure 8

    A 0.258 mm
    B 258.99 mm
    C 25.99 mm
    D 2.58 mm

43. Identify the test carried out in figure 9

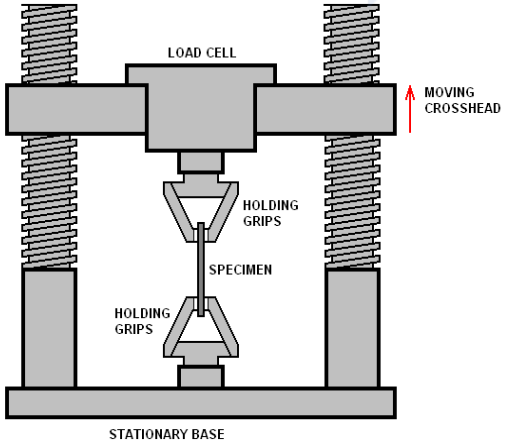
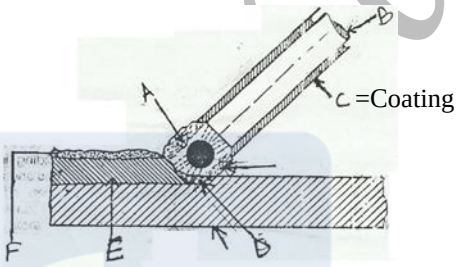


figure 9

    A Compressive test
    B Tension test
    C Brinell hardness test
    D Vickers hard ness test

44. A steel bar with cross sectional area of 150mm and breaking strength of 40N can rupture at?
    A 60 N
    B 60000 N
    C 600 N
    D 6000 N

45. Identify the number of the welding process in figure 10 below



    A 135
    B 141
    C 121
    D 111

46. The welding process which uses non consumable Electrodes is
    A T.I.G welding
    B M.I.G welding
    C M.M.A welding
    D M.A.G welding

47. Select the portion of the oxy-acetylene flame which has the highest temperature
    A Outer envelope
    B Blue white feather
    C Inner cone
    D Inner cone and outer envelope

48. A 6mm diameter snap head rivet is used to assemble two plates of 3mm thick each. The length of the rivet is
    A 15mm
    B 15.6mm
    C 156mm
    D 18mm

49. State the process in the list below which is not a surface finishing process
    A Boring

B Honing
C Grinding
D Lapping

B their mechanical properties
C their appearance
D their chemical properties

50. A reason for metals finishing is to improve
A their sizes